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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

APR 46148

Not for publication without
prior consent of this division.

REPORT FOR THE WEEK ENDING OCTOBER 7, 1939.

HAVRE:

Cooler weather with frost and light precipitation characterized this week.

Field-cured weights of corn fodder were obtained from various projects in the experimental field. Aside from light yield in the MC series and from a few locally adapted varieties, the production of ear corn was almost nil. Crested wheatgrass sown late in September is germinating unevenly, owing to lack of surface moisture, a condition also true with respect to winter wheat and winter rye.

Miscellaneous painting and building repairs have been in progress. A sixth water hydrant manhole, near the beef barn, has been permanently curbed with brick, replacing the former wood box construction which periodically rotted out.

Visitors included Director Clyde McKee of the Montana Experiment Station; Dr. H. H. Swain, Executive-Secretary of the Greater University; and H. J. Hargrave, Superintendent of the Dominion Range Station, Manyberries, Alberta.

Maximum temperature, 75°; minimum, 21°; precipitation, 0.19 inch.

JUDITH BASIN:

Moisture received during the week was sufficient to insure nearly ideal conditions for fall-sown crops. Rain on Monday and Tuesday brought 0.24 and 0.48 inch of precipitation and a light snow fell most all day Friday.

Wet weather prevented outside work.

Director Clyde McKee visited the station on Thursday.

Maximum temperature, 65°; minimum, 26°; precipitation, 0.82 inch.

HUNTLEY:

Frequent showers and resulting wet soil held field work to a minimum most of the week. The moisture received during the last few days of September and the first week of October has been sufficient to sprout winter wheat and to bring it up in patches over the field. Crested wheatgrass has also turned quite green, and in some of the thicker plantings it would now furnish considerable grazing.

The first killing frost of the season occurred on the first of the week when the temperature fell to 28°. Volunteer barley was killed as was second growth sorgo, Sudan grass, and beans. Tender garden crops such as tomatoes, melons, and sweet corn were also frosted.

Maximum temperature, 78°; minimum, 28°; precipitation, 0.56 inch.

SHERIDAN:

Largely cloudy weather, with several traces of precipitation, and with temperatures slightly below the seasonal average, prevailed over the most of the week. Only miscellaneous field work could be accomplished the first part of the week. The last of the week the remainder of the corn, and the forage sorghums in the main field, were hauled and shredded, and Sudan grass was threshed for seed. Potatoes

in the rotation 37 were dug, and the plot was sown to winter wheat. Only the forage sorghum varieties in field I and the grain sorghum varieties remain to be hauled. Some plots of winter wheat sown September 20 are beginning to emerge.

Maximum temperature, 76°; minimum, 34°; precipitation, trace.

MANDAN:

Agronomy - Weather during the week was cloudy for the most part and cool. A good rain fell on the evening of the 4th. This came slowly and all soaked into the soil. This rain should help winter rye, as all of it had not come up.

Potatoes were dug early in the week. The yields were poor, ranging from 57 to 66 bushels per acre.

The total rainfall for September was 0.17 inch. The total for the year to the end of September was 13.10 inches, or 0.30 inch below normal. The 25-year average for September is 1.33 inches.

Maximum temperature, 77°; minimum, 33°; precipitation, 0.50 inch.

Horticulture - Reglazing and reputtying of the greenhouse was done in the early part of the week. Harvesting of late vegetables and cleaning up of vegetable field plots has been under way for the last few days.

A number of trees were pulled during the week, including some in the breeding blocks, those in the spacing experiment, and part in the Hibernal top-working block.

Arboriculture - The taking of fall notes including height and diameter measurements has been carried on during the week. Plowing of nursery tree stock commenced Friday and is in progress at the present time. Leaves are still green on most of the stock, but the lateness of the season necessitates the commencement of the work.

ARCHER:

The weather during the week ending October 7 was cool and dry with considerable wind during October 4. Winter cereals which have emerged are at a standstill. Potatoes are ready to dig, but the vines are still green. The dairy cows were taken out of the Sudan grass pasture, and the ewes were put into the cooperative experiment pastures.

The total cash returns this year from 92 ewes, 21 yearling ewes, and 2 bucks were $766.71. Four or five lambs are yet to be sold. The wool was sold at 20 cents per pound and the lambs at $7.75 per cwt. The old ewes were sold for $3.50 per head. Twenty ewe lambs and two buck lambs have been retained for breeding purposes.

Director W. L. Quayle of the University of Wyoming; Wayne W. Austin of the Soil Conservation Service; and J. B. Putnam, E. J. Novak, and J. A. Bilyen of the CCC Camp at Bridgeport, Nebr. were station visitors.

Maximum temperature, 74°; minimum, 33°; precipitation, 0.01 inch.

NORTH PLATTE:

Drought conditions continue to prevail. No precipitation was recorded during the week. The average frost date, October 4, has passed, and no freezing temperatures have been recorded to date. Temperature during the week was cool, and high winds on a few of the days caused considerable soil movement.

The seeding of wheat on the DLA plots was completed. Some wheat seeded on fallow last week has emerged, but stands will be quite spotted under present conditions. Sorghum variety harvesting was completed during the week. Only those sorghums seeded on fallow headed, and the forage growth of those seeded on oats stubble was very short. Atlas on fallow yielded nearly 10 tons of forage, green weight, while this same variety on oats stubble yielded 1.5 tons. The Sudan grass seeded in the roadways late in the summer made a very good growth and has been cut for hay.

Dr. F. L. Duley of the S. C. S. visited the station during the week and took soil moisture samples and seeded wheat on his project.

Maximum temperature, 87°; minimum, 35°; precipitation, none.

COLBY:

The weather has been dry with three days of high wind, dust storms, and soil blowing. The temperatures have been high during the day with big drops during the night. There was no frost. If the weather we have had this week keeps up through the winter there will be a lot of soil blowing, as there are a lot of bare fields.

Seeding of the winter wheat plots is still being delayed in the hope that it will rain. Over the east and south parts of this county what is generally up to fairly good stands on fallow ground, but very little wheat is up in the northwest quarter, which includes the station.

The milo plots are being headed by hand this week. The yields will be poor to moderately good. Practically all of it has dried ripe rather than ripened. Most of the plots are only partially headed.

Maximum temperature, 85°; minimum, 35°; precipitation, none.

Precipitation for September, 1939, 0.43 inch; 52-year average, 1.49 inches; precipitation, January 1 to Sept. 30, 1939, 12.50 inches; 52-year average, 15.24 inches; seasonal precipitation, 1939, 8.30 inches; 52-year average, 13.50 inches.

HAYS:

Continued dry weather prevailed, but there was very little wind to cause alarm. Surface soil is drying out deeper all the time. Some of the farmers who have been waiting for rain before seeding wheat are now seeding in the dust, having waited as long as they believe it is safe to delay. Other farmers are still waiting to play "safe". It is questionable who is playing the "safest". For project seeding, we are waiting for at least another week for rain, after which if it does not rain we may trail the crowd and lay the seed in the dry soil. 30 to 40 percent of the fields are now seeded. Wheat that has been in the ground long enough to germinate is coming up extremely spotted.

Work during the week consisted largely of collecting soil moisture samples from sorghum plots and from plots that will be seeded to wheat.

Maximum temperature, 89°; minimum, 43°; precipitation, none.

GARDEN CITY:

Only a trace of moisture fell this week. Wind velocities were rather high, and dust occurred on four days. Some of the soil movement was local. Dust storms probably will be quite frequent this winter and next spring, unless considerable rain is received. Many of the fields have been worked so much while they were dry that the surface five or six inches are ashy, and any further working will only aid soil blowing. The soil has also been so dry that there has been very little wheat seeded, and that which was seeded has not germinated; therefore, if moisture is not received soon, there will be little cover on the soil to prevent blowing.

Field work consisted of harvesting sorghums and taking soil moisture samples.

R. P. Yates, Assistant Extension Agronomist from Ft. Collins, Colo., was a station visitor.

Maximum temperature, 91°; minimum, 36°; precipitation, trace.

TUCUMCARI:

Moderate temperature prevailed throughout the week. Crops are maturing rapidly, late sorghums hastened ripening due to lack of moisture. Station work consisted of harvesting, with a large number of late planted sorghum plots remaining to be harvested when frost occurs.

Wheat growers report that early seeded wheat needs moisture and has made but little growth the past two weeks. In some localities there is insufficient moisture for germination.

Maximum temperature, 87°; minimum, 44°; precipitation, none. Precipitation for the year to date is 10.39 inches, compared with a 34-year average of 13.66 inches for the period.

DALHART:

Work during the week was largely seasonal and consisted of heading a few mature milo plots, harvesting a part of the corn rotation plots, heading the grain sorghums (except for a few later varieties) which were planted in the variety block on June 22, and some perennial weed eradication work. Final note taking was continued. Among the one or two outstanding features of the plots this year is the exceptional uniformity both of plant height and head size for the individual plots. For the immediate past 7 years the plots have been characterized by a spotted condition. The uniformity this year is apparently due to the fall and winter rains, which apparently soaked into the ground where they fell. One difference that was noticed for the rotation kafir plots was the peculiarity of a rather random distribution of rows which had 1 to 3 suckers, with heads, per plant which were adjacent to, what should be, identical rows but which had no suckers.

Severl days recently have furnished a high wind movement. This has had a tendency to hasten maturity on some of the sorghum plots.

Maximum temperature, 87°; minimum, 36°; precipitation, none, although we have had several sprinkles this morning that have registered 0.01 inch at noon. The wheat and rye plots remain to be seeded.

BIG SPRING:

Slightly cooler but continued dry weather prevailed during the past week. It was very favorable for harvesting crops, and full advantage was taken of it by all farmers. There are plenty of pickers in this section now, and it is probable that the past week was the peak one for the cotton picking season. Much milo is also being headed at this time. Heading is unusually difficult this season, as the stalks fall down before the heads are dry enough to put in the bin.

Station work has consisted of picking cotton and heading milo. All cotton plots have been picked over once, and many of the milo plots in the rotations have been headed. Other work consisted of taking final soil moisture samples for the season.

Maximum temperature, 95°; minimum, 58°; precipitation, none.

WOODWARD:

The past week has been rather variable, from cool to hot, with a range in temperature of over 50° and with some rather windy days, wind velocity varied from 4.7 to over 18 miles per hour during the week. No precipitation has yet been received.

The meeting of the Western Oklahoma Agricultural Workers was held at the station on the 3rd and 4th. About 80 county agents, SCS, Triple A, vocational agricultural workers, range examiners, etc., were in attendance. Interest was very good, and extension officials who organized the meeting, suggested making it an annual affair. The two mornings were spent in discussions and the afternoons in field trips.

Harvesting grain sorghums has been continued, also the harvesting of grass, tree, and shrub seed. Fruit picking has about been cleaned up for the season. Jujubes and a few pears were picked during the week. The regular soil moisture samples were taken.

Various persons who were here for the meeting mentioned the fact that considerable wheat is being planted over the northwestern section of the State. Due to extremely dry conditions this has no prospect of germinating until rain is received. In this immediate section most of the farmers are waiting for rain.

Maximum temperature, 97°; minimum, 46°; precipitation, none.

- - NOTE - -

In place of the news letter for the week ending October 28, the last letter for the month should be for the ten days ending October 31.

During the months from November to March, inclusive, news letters will be monthly.

BUREAU OF PLANT INDUSTRY

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U. S. DEPARTMENT OF AGRICULTURE

•P• 46148

OCT 14 1930

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REPORT FOR THE WEEK ENDING OCTOBER 14, 1939.

HAVRE:

Mostly clear skies, light frost at night, and warm days with no precipitation typified the ideal fall weather which prevailed during the week.

Work is about completed in the experimental field. A small crop of potatoes was dug, corn fodder hauled, fallow ridged with a duckfoot, and routine dates of seeding made. Fallow in contour field E-1 and in field C was also ridged with a duckfoot cultivator.

Visitors included Truman Anderson and M. P. Hansmeier of SCS, who inspected cooperative projects. Dr. W. V. Lambert and W. H. Black of B. A. I., accompanied by Dr. R. T. Clark of the Montana Experiment Station also conferred about cooperative breeding and feeding investigations with Hereford cattle.

Maximum temperature, 65°; minimum, 27°; precipitation, none.

JUDITH BASIN:

The weather during the week was ideal for this time of the year. No precipitation was received and on a few days the wind velocity was rather strong.

Corn fodder from plots in the rotations, variety and cold resistant tests were weighed and moisture samples taken. Yields appear to be somewhat higher than last year on many treatments. Some extra seedings of winter wheat material for winter hardness tests were planted in cooperation with the Utah Agricultural College.

Final weighings were made of the steers on native grass in the pasture test. The group was on pasture 158 days compared to 120 days for the crested wheatgrass group and 110 days for the bromegrass group.

Maximum temperature, 65°; minimum, 28°; precipitation, none.

HUNTLEY:

With soil and weather conditions becoming increasingly more favorable as the week progressed, farming operations picked up rapidly until at the close of the period field work was again in full swing throughout this locality. On valley farms sugar beet harvest, bean threshing, and cutting of late corn is under way, while on the benchlands fall plowing and seeding of crested wheatgrass and a little late wheat is being done.

Winter wheat and rye which a week ago was coming up in patches now shows a fairly uniform stand over most plots and fields. In the stubbling-in and continuous crop plots there appears to be considerable volunteer wheat, which, if it all survives the winter, may result in stands being too thick next year. Downy bromegrass is also making a heavier fall growth than has been the case for the last three years.

Field work on the plots consisted of some miscellaneous fall plowing, raking and bunching seed alfalfa preparatory to threshing, and treating seed for the winter wheat smut nursery.

Maximum temperature, 83°; minimum, 26°; precipitation, trace.

SHERIDAN:

Mostly fair weather with temperatures about average for the season prevailed over the week. There was no precipitation.

Lambs remaining on hand were weighed. The remainder of the early varieties of sorgo, including one field for feed, were hauled and shredded. Other station work consisted mainly in odd jobs necessary in getting ready for winter.

Oscar K. Barnes of the Soil Conservation Service was at the station to make clippings of native grass quadrats.

Maximum temperature, 77°; minimum, 27° (first killing frost, 8th); precipitation, none.

MANDAN:

Agronomy - The weather was cloudy and cool during most of the week, with a light shower. Winter rye showed slight improvement.

Maximum temperature, 65°; minimum, 25°; precipitation, 0.02 inch.

Cooperative Grazing Experiment - The grazing season was closed during the week with the final weighings of the cattle. The weather was poor on two of the weigh-days. The cattle showed little gain during October.

Horticulture - Trees in the Spacing Experiment and Hibernal block were pulled during the week. Due to the drought of 1934 and 1936, trees in the blocks of the Spacing Experiment were lacking in uniformity and many had died. Accordingly it was thought best to start a new spacing experiment. Fall notes on growth and stands are being taken.

The garden plots have been cleaned up, and manure is being hauled to the acre garden.

Arboriculture - The digging, pulling, and heeling-in of windbreak nursery stock commenced the first of the week, and has been in progress since that time. The seedlings are being pulled out of dry soil resulting in stripping of roots on some species.

BELLE FOURCHE: (Report for the week ending October 7, 1939.)

The week was mostly cool and unsettled, and a beneficial rain of 0.51 inch was received on October 5. Germination of fall-seeded grain, and subsequent emergence with satisfactory stands, is now practically assured. Crested wheatgrass and bromegrass have resumed growth, and native pastures and ranges are becoming green. A small amount of sweetclover seeded in the spring with nurse crops miraculously survived the severe drought and is making a limited fall growth. Much of the oats on more favored areas and on summer-fallowed land is making a second growth.

Maximum temperature, 76°; minimum, 33°; precipitation, 0.51 inch.

BELLE FOURCHE:

Cold, unsettled weather prevailed most of the week, but precipitation was limited to 2 light showers. A heavy frost occurred the night of October 13, when the temperature remained below freezing for 7 hours, and a minimum of 26° was recorded. Medium hardy garden crops and flowers were killed or damaged, but volunteer grain, alfalfa, and sugar beets were not injured by the frost.

The cold weather retarded plant growth, and strong winds on three consecutive days caused rapid drying of the surface soil. Fall grain is coming up very slowly, but good stands should eventually be secured. Grass, alfalfa, and sweetclover made little growth.

Maximum temperature, 70°; minimum, 26°; precipitation, 0.02 inch.

ARCHER:

The weather during the week ending October 14 was clear and mild with minimum temperatures around freezing. A deviation occurred Sunday evening, October 8, when rain followed by snow produced a total of 0.35 inch of precipitation. This moistened the soil in the bottom of the drill rows beyond the depth of fall seeded cereals. On good fallow this moisture contacted the fallow moisture. It is now possible that a considerable portion of the fall-seeded cereals will at least germinate.

During the week the potatoes were dug, sheep were weighed, and the husking of corn was started.

Director W. L. Quayle of the University of Wyoming was a station visitor.

Maximum temperature, 68°; minimum, 30°; precipitation, 0.35 inch.

NORTH PLATTE:

A good rain fell during Sunday night and Monday. This was the first rain of any consequence recorded since the first week in August. There will now be sufficient moisture to bring up all the wheat seeded. Wheat was seeded into the corn stalks on the basin listing experiment field early in the week. Several farmers in this area have seeded additional acreages of wheat since the rain. The first freezing temperature for this fall was recorded at the table station on Friday night, October 13. The first frost occurred at the bench station early in the week. The average fall frost date is October 4.

The fall soil sampling was completed during the week. Some difficulty was experienced in sampling the cropped plots because of the extremely dry and hard condition of the soil.

Maximum temperature, 71°; minimum, 30°; precipitation, 0.71 inch.

COLBY:

The dry weather continued through another week. The days were warm, but nearly every night the temperature dropped to near freezing. The minimum has dropped below freezing twice this week before today, and this morning the low was 29°. There was some ice in the water troughs, but tomato and other garden plants and field crops show no signs of injury. A brisk south wind is blowing some dust today, the first for over a week. The cloudy weather last week end produced scattered showers over much of the western part of the State, but none here.

The winter wheat plots still remain unseeded. None of the date of planting plots planted since the middle of August are up, so there seems to be no advantage in planting until it rains. It looks as though most of the fields which have been planted but where the wheat is not up will blow readily after a rain.

Maximum temperature, 75°; minimum, 29°; precipitation, none.

HAYS:

The weather has been clear, generally quiet and mild throughout the week. One light frost was recorded.

A few more wheat drills have been started during the week. One by one another farmer starts seeding in the dust. There are, however, some farmers still holding off for rain.

We are waiting a few more days for rain, after which if it does not rain we will drill the plots. The Experiment Station commenced seeding but likely will seed only part of the fields and will leave some to sow after it rains.

Work on the project consisted of finishing the regular run of soil moisture determinations to represent seeding date conditions for wheat, and completion of the final preparations for drilling of the wheat. Also most of the plowing to be done in fall was completed.

Maximum temperature, 79°; minimum, 33°; precipitation, none.

GARDEN CITY:

Only a trace of moisture fell this week, and therefore it remains very dry. Temperatures dropped this week, and the minimum was 31° on two nights. The first frost occurred on October 9. The average frost date is October 12. The frost was severe enough to kill the leaves on the sorghums. Dust occurred on one day.

Field work consisted of completing the shocking of sorghums and taking soil moisture samples on the milo plots on the Basin Lister Project.

Station visitors were Don Atkins, Area Agronomist, S. C. S., Dodge City, Kansas, and Leon Wenger from the Fort Hays Experiment Station.

Maximum temperature, 78°; minimum, 31°; precipitation, trace.

TUCUMCARI:

Temperatures have dropped rapidly, but no frost has occurred. The week was calm and sunny, perfect harvest weather, following a slow all-day rain of 0.81 inch which fell last Saturday.

Station work has included heading and binding of sorghums, final picking of cowpea seed, and harvesting of increase land Sudan grass.

Maximum temperature, 74°; minimum, 38°.

DALHART:

The rain which came last Saturday and Sunday brought a total of 0.61 inch. This came as gentle showers. It was insufficient to revive sorghums and was enough, though hardly ample, to justify the seeding of the wheat and rye plots. Rye was also seeded in the conifer planting and miscellaneous tree plantings.

Other field work during the week consisted of heading some grain sorghums as they matured , the last pulling of broomcorn, and some stover harvesting.

Dr. M. A. McCall, Asst. Chief of the Bureau, Dr. O. S. Aamodt, in charge of Division of Forage Crops and Diseases, and E. W. Johnson, of the Woodward Station were official visitors during the week.

Maximum temperature, 75°; minimum, 32°; precipitation, 0.61 inch. Temperatures of 35° and 33° early in the week show frost nipping of leaves on a few plants, the reading of 32° this morning apparently will show less injury than either of the above.

BIG SPRING:

The extremely dry condition, which has prevailed for the past two months, was relieved somewhat on the night of October 8 when a rain of 0.57 inch was received. This will be of only temporary value, as the soil was only wet down about 2 or 3 inches.

Some late seedbed preparation for wheat was attempted after the rain, but a poor job was accomplished because the soil was not wet down deep enough. Station work consisted mainly of heading milo. All rotation plots, spacing, and disease resistant strains in the variety test were headed. With the exception of some late planted early kalo, all sorghum plots have now been harvested.

Maximum temperature, 91°; minimum, 40°; precipitation, 0.57 inch.

WOODWARD:

The week was rather cool and not very windy. The minimum temperatures on five days have been 50° or below. The first measurable precipitation since August 18 was received. This only amounted to 0.09 inch at Woodward, but Woodward apparently was on the edge of an area which received fairly good rains, half and inch being reported within 30 miles of Woodward and over three inches at Elk City, about 80 miles south.

Second growth Sudan grass on areas to be planted to grass next spring was again clipped to keep the plants from going to seed and causing trouble from volunteer Sudan in the grass next season. A considerable number of grass plants were transplanted from the greenhouse to nursery blocks. It was necessary to haul water to these plants as they were planted. A crew employed by the Soil Conservation Service nursery is picking grass seed around the sand hills in the vicinity of Waynoka, about 40 miles from this station. Regular soil moisture samples have been taken. More tomato selections have been picked for seed. Harvesting of grain sorghums on the Cereal project has been continued. Mr. Johnson made a short inspection trip in the Texas Panhandle and reports that there is considerable wheat up to good stands in the area around Perryton and Dalhart.

Visitors at the station this week were Drs. M. A. McCall and O. S. Aamodt.

Maximum temperature, 85°; minimum, 34°; precipitation, 0.09 inch.

- - NOTE - -

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U. S. DEPARTMENT OF AGRICULTURE

GPO 123668

OCT 21 1929

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REPORT FOR THE WEEK ENDING OCTOBER 21, 1939.

HAVRE:

Weather conditions during the last seven days were quite variable. A trace of snow, the first of the season, occurred on the 15th, followed by a minimum temperature of 16°, after which much warmer weather prevailed with partly cloudy skies, temperatures above normal, and several days of very strong westerly winds. The average wind velocity during the 20th was 27.7 m.p.h. on the 10-foot and 20.4 m.p.h. on the 2-foot anemometer, exceeding previous records for the month of October. A 72-hour average recorded by the 10-foot instrument was 21.5 m.p.h. Soil blowing was quite common on fields lacking a clod mulch, trash cover, or strip protection.

Experimental agronomy work was confined chiefly to shelling corn varieties, painting stakes, and constructing shelves for small tools and equipment. The farm department is installing a new underground gasoline tank and pump and constructing a low hay rack on the running gear of a dismantled car.

Animal husbandry activities consisted of rounding up cattle at the Bear Paw lease, after which calves were trucked to the station and the steers consigned to the State College for winter fattening. A carload of cows was also culled for marketing.

Visitors included Ralph McCall of the Animal Husbandry Department, Montana Experimental Station, and Fred S. Willson, County Agent. W. F. Long, S. C. S. Engineer, inspected the contour stripped field.

Maximum temperature, 77°; minimum, 16°; precipitation, 0.01 inch.

JUDITH BASIN:

The weather during the week was unsettled with snow falling most all day Sunday. Skies were mostly overcast, and the wind velocity on several days was high. Precipitation so far this month exceeds by 0.17 the monthly average 0.97 inch. This is the second month during 1939 to equal or exceed the 30-year average. Conditions for fall-sown crops continue to be favorable.

Steers for the winter feeding and pasture experiment were weighed the first of the week on three consecutive days, then divided into two groups and the test begun. One group was placed on a matured crested wheatgrass pasture of about 10 acres, and the other group was placed in the feed lot and will be fed crested wheatgrass hay. Both groups are to receive in addition a high protein supplement.

Official visitors during the week were Director Clyde McKee, Mr. L. A. Clark, and Mr. Torliff Aashein all from Bozeman, and Mr. Leon C. Hurtt of Missoula and party.

Maximum temperature, 74°; minimum, 28°; precipitation, 0.32 inch.

HUNTLEY:

Light precipitation, principally snow, fell early in the week, but the amount received was of little benefit to crops. Despite the relatively small amount of moisture received so far this fall, cloddy, fall-plowed ground is slacking considerably.

Winter wheat and rye appear to be holding their own and look about the same as they did a week ago. A good, soaking rain, followed by a few warm days, is needed to put these crops in good condition to withstand the winter. On the stubbled-in plots the ground is cracking along the drill rows almost to the depth of seeding.

Two days of rather high wind velocities have filled the fences with tumble weeds, blown over corn shocks, and scattered cocks of seed alfalfa awaiting threshing. Bean threshing and nursery seeding which was under way was discontinued until the wind subsides.

Maximum temperature, 70°; minimum, 30°; precipitation, 0.06 inch.

SHERIDAN:

Weather conditions over the week were mostly fair, with temperatures above the seasonal average. Fall-sown grain on fallow and corn ground has emerged and is making more growth than it has in the fall for some years.

Potatoes were dug and contour lines were plowed out in Fields O and I. An attempt was made to thresh the grain sorghum varieties, but the stalks were found to be still too green for threshing.

Maximum temperature, 77°; minimum, 32°; precipitation, none.

DICKINSON:

Mild, dry weather continued with only 0.26 inch of precipitation to date in October and only 0.37 inch since August 20. The surface soil is so dry that most of the winter wheat seeded in stubble September 15 has not germinated and that seeded on fallow has only about half a stand. Winter rye which was seeded August 12, following about 2 inches of rain, and which preduced good stands at the time, has been thinned some by grasshoppers and rodents. The plants are now badly curled.

Some pruning and clean up work has been done in the orchard. Although the surface soil is extremely dry, some moisture at lower depths in the cultivated areas has permitted trees in general to approach the winter in a vigorous condition.

In pruning, most varieties of plums, apples, and crabs showed the effect of the severe drought and extreme cold in 1936. Most of the interior wood is dead with only a thin growing layer on the outside. This makes the trees break easily in the wind or under a load of fruit and will obviously shorten the life of the trees.

A study of the records indicates the relatively short life of most varieties of fruit which have been planted here. Five trees of Virginia crab are the only fruit trees surviving of more that 20 varieties planted in 1905 and 1906. This variety was the only one growing in 1919 from this earlier planting. Most of these trees were lost because of damage by hail in 1912 and 1914 and heavy winter killing. More than half of the trees of the plums, apples, and crabs planted in 1923 are now gone from the orchard. Most of this loss was a direct result of drought and severe winter killing, as there has been no severe hail damage since they were planted.

The last of the 13 Compass cherry trees planted in 1923 were removed this week. Most of the others were killed by the drought of 1934.

Opata plum which was severely damaged in 1934, resulting in killing of most of the branches and severe cutting back, had produced enough new growth so that a good crop was harvested in 1939. The severe killing in 1934 and reduction in wood permitted this variety to survive the drought of 1936 much better than some other varieties of equal hardiness which did not have the severe killing in 1934. Both the Compass and Opata are considered to be among the shorter lived varieties.

A few remaining trees in the plum seedling windbreak planted in 1925 south of the orchard were removed and the ground was plowed in preparation for planting in the spring to native red cedar, if soil moisture conditions are favorable. On the east end, where the soil is deeper and the moisture supply more favorable, the plums were left. This plum windbreak has provided an excellent example of the effect of soil and moisture supply on the growth, production, and longevity of the trees. Toward the west end where the soil was thin with little capacity for moisture storage the trees attained only about half the size they did on the east end where the soil was deep and received additional moisture from run-off. Crested wheatgrass invaded the west end of the windbreak and gave severe competition to the trees for the limited moisture available, however, the grass held more snow in the winter than if the trees had been cleanly cultivated.

Maximum temperature, 74°; minimum, 18°; precipitation, none.

MANDAN:

Agronomy - Weather during the past week was mild. Freezing temperatures occurred on part of the days.

Maximum temperature, 74°; minimum, 16°; precipitation, none.

Cooperative Grazing Experiment - The gains of the yearling steers for the closing period of the grazing season, and for the season, are shown in the following table. There was plenty of feed left in all native pastures at the close of the season, yet the steers put on higher gains in the larger pastures.

Gains of yearling Hereford steers for 15 days in October and for the season.

Pasture (acres)	Number of steers	Gain in pounds per head	
		October	155 days
100	10	10.0	265.0
70	10	6.0	270.0
50	10	4.5	241.5
30	10	1.5	241.0
70 (Rotation)	14	23.2	228.2
7 (Crested wheatgrass)*	4	10.0	250.0
12.5 (Crested wheatgrass)**	6	12.5	224.2
93 (Reserve)	4	12.5	283.8

*80 days on crested wheatgrass, 75 days on native pasture.
**95 days on crested wheatgrass, 60 days on native pasture.

Horticulture - Work has consisted of pulling and burning discarded trees; plowing field plots; and pruning and making cuttings of gooseberries, currants, and grapes. Planting of hardy lilies and tulips on the grounds and in experimental plots was finished the early part of the week.

Trees and shrubs about the grounds are slowly maturing and shedding their leaves. There was an unusually fine display of fall coloring of the foliage of tartarian maple, sumac, red osier, and hawthorn species.

Arboriculture - The pulling and heeling-in of tree nursery stock was completed during the week. Plowing of nursery fields has commenced with the soil turning up very dry and lumpy.

Cedar seed is being collected from trees in the testing block today.

BELLE FOURCHE:

Approximately 2 inches of snow were received on October 15, and the first half of the week was cold and unsettled, but the last three days were clear and warm. Several heavy frosts occurred, but vegetation suffered no additional injury.

The snow checked drying of the surface soil and was of some benefit to fall grain. Winter wheat and winter rye are up with good stands on all cultural treatments, except fall plowing, and satisfactory stands apparently will eventually be obtained on plowed land. Continued growth and survival of fall grain will be seriously hampered by lack of moisture, if additional precipitation is not received at an early date. Moisture is present only in the first 4 or 5 inches of soil, and this limited supply is being rapidly depleted by frequent strong winds.

Maximum temperature, 74°; minimum, 25°; precipitation, 0.17 inch.

NORTH PLATTE:

Fair weather prevailed throughout the week. No rain was recorded. The moisture received two weeks ago was sufficient to start the wheat seeded on all methods of preparation.

The topping of early Kalo in the bulk field was completed during the week. Corn was picked out of the field on which basin listing and ordinary listing are compared. The only corn in the field was along the edges and in the low spots. About 15 bushels were picked from the 12-acre field. Corn yields are fair to good in some areas of this locality, but the entire corn crop over western Nebraska is poor. The irrigated potatoes were dug during the week. The quality was good, and the yield was approximately 400 bushels per acre.

Maximum temperature, 80°; minimum, 25°; precipitation, none.

COLBY:

This week has been dry, warm, and pleasant. The day temperatures have been above 70° nearly every day, and the night temperatures usually drop into the 30's. On Tuesday morning the minimum was 28°, and there was some ice on small watering troughs. Some tender plants were nipped but not killed. Tomato vines are not completely dead, flowers are still in bloom, and late sorghums are still growing, showing frosted leaves only in spots. The death of annual vegetation seems to be a gradual, long drawnout process this fall. Trees and shrubs and other perennials seem to be entering the dormant stage very gradually also.

The winter wheat plots are still unseeded. The conditions for seeding, instead of getting more favorable, are becoming less so, as the surface soil is drying out deeper. Had we planted a month ago there would have been spotted stands on the fallow plots. Planting

now would mean that there would be no germination until rain wet the seed bed. The danger of seeding before the rain this year is that the surface is in such a condition that a drill pulverizes it to a fine dust that blows with every breeze.

The sorghums have all been hauled in and weighed. The fodder yields were very light. The heads have not been threshed, as some of them have not dried sufficiently. Most of the milo threshed in this vicinity is yielding from 3 to 8 bushels, with few fields going above 10.

Dean Call and Prof. Atkeson of the Kansas State College visited the station Thursday.

Maximum temperature 83°; minimum, 28°; precipitation, none.

GARDEN CITY:

No moisture fell this week, and only a trace has fallen thus far this month. Maximum temperatures have been a little above normal and minimum about normal. The minimum dropped to 29° on one night. Dust occurred on one day.

Sorghum harvest is progressing rapidly over this area, and the yields in general are low.

Station visitors were L. E. Call, Director of Kansas Experiment Stations, and F. W. Atkeson, Head of Dairy Department, Kansas State College.

Maximum temperature, 81°; minimum, 29°; precipitation, none.

TUCUMCARI:

Weather which was clear, moderately warm, and free from high winds permitted fall harvest to progress without interruption. A temperature of 37° is the minimum recorded this fall, but frost is expected soon.

No threshing of sorghums has been attempted, but will be under way with completion of heading and binding. Binding of increase land Sudan grass, harvesting of peanuts, and heading of increase milo have comprised the week's work.

Ranges vary from fair to good, with livestock in excellent condition. Wheat south of Tucumcari offers no pasture, and many farmers with cattle contracted are worried. Early wheat is making no growth; much late seeded wheat is lying in dry soil or shows only partial stand.

While precipitation since January 1 is 11.20 inches, some 3½ inches below normal for the period, crop yields promise to be higher than this limited moisture might indicate. Corn is the chief exception, being virtually a failure.

Maximum temperature, 80°; minimum, 37°; precipitation, none.

DALHART:

Removing of seed heads from the sorghum nurseries and seed plots was one of the chief jobs of the week. Heads were removed from sorghum plots as fast as the plots reach full maturity. Because of the low mean temperature (below 60°) for the past 10 days the maturity is checked. It seems rather peculiar that the heaviest frost so far received was above 32°, and yet a wide variation of injury resulted.

A very few sorghum plants have all of the leaves killed, a few plants show the upper two or three leaves frosted, while the large majority of the plants show no injury whatever. The lowest lying plots in the north field that are on the thinnest soil show the highest percentage of injury.

Good emergence is being obtained on wheat. Rye shows good emergence to poor emergence on a few plots. There is a low amount of moisture in the surface soil, so unless other moisture is received soon the plants can hardly be expected to survive. Only an occasional field of wheat shows good emergence in the surrounding territory.

Maximum temperature, 78°; minimum, 32°; precipitation, none.

BIG SPRING:

Weather conditions during the past week have merely been a continuation of those prevailing for the past several weeks, that is, warm and dry. These conditions have been very favorable for field work, and as a result the cotton crop will be nearly all picked by the first of November.

Station cotton picking will consist of one more light picking, and that will probably be obtained during the coming week as the bolls are practically all open now. Station work this week has consisted of heading increase milo and remodeling feed lots for the coming year's feeding tests.

Maximum temperature, 91°; minimum, 43°; precipitation, none.

LAWTON:

A gently falling rain over a period of approximately 12 hours on October 8 measured 1.40 inches at the station. This rain, although quite variable in amount, was quite general over the southwestern part of the State, and it represents the only precipitation of any consequence since August 14.

Fields of small grain that were dusted in previously promptly emerged to good stands. Completion of seed beds and seeding of wheat, oats, and barley as quickly as possible constituted the general farm program wherever precipitation was sufficient to warrant such work.

Station seedings of small grain were made from the 10th to the 13th, and good stands emerged from the 17th to 20th except wheat that was drilled in cotton stalks. Emergence in this case was slower and less uniform.

Cotton picking is rapidly being completed. It is estimated that 98 percent of the crop will have been picked within another week. The total number of bales ginned within the county by the 14th was 3,485.

Ideal fall weather prevailed throughout October to date. Maximum temperature ranged from 69° to 97° and the minimum range extended from 41° to 74°. The total precipitation for the month to date is 1.44 inches.

Dr. M. A. McCall and Dr. O. S. Aamodt were station visitors on the 16th.

WOODWARD:

The drought still continues. The past week was moderately warm and quiet with only one windy day. Work during the week consisted of cleaning up cereal grain sorghum plots, planting cereal small grain project, cleaning old dirt out of greenhouse beds and replacing it, picking two plots of cotton, and regular mowing of sage brush plots on ranches north of town.

A number of cuttings were made and planted in the greenhouse, the Caterpillar Diesel truck was overhauled, demolishing of the old residence on newly acquired land was completed, and construction of pump house was started.

On Tuesday, October 17, 40 or 50 farmers, Triple-A officials, Range Examiners, et cetera, visited the station, in company with Mr. Dumas, Assistant County Agent, in charge of the Triple-A program, to study phases of the grass and range experiments.

Official visitors during the week included Messrs. Hogue from Washington, Coryell from Ft. Worth, both from the Land Acquisition Staff of the Soil Conservation Service and E. V. Pearson from the Elk City, Oklahoma project

Maximum temperature, 89°; minimum, 36°; precipitation, none.

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DRY LAND AGRICULTURE

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U. S. DEPARTMENT OF AGRICULTURE

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OCT 21 1939

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REPORT FOR THE PERIOD OCTOBER 22-31, 1939.

HAVRE:

Stormy conditions occurring the first part of this period were followed by clear, warm weather for the last three days. A minimum temperature for the month of -1° was recorded on October 25. Wind velocity readings were above normal for October.

The last date of seeding of winter wheat and crested wheatgrass was made on the 31st. The raking and burning of weeds on the experimental plots has been almost completed.

A carload of cull cows and yearlings were shipped October 24. The heifer calves were placed in a pasture lot to remain until the beginning of the individual feeding trials.

Visitors included Ralph Williams and Lou Premer of the Judith Basin Branch Station.

M. A. Bell left to assume his new duties as Superintendent of the Southern Great Plains Field Station at Woodward, Okla.

Maximum temperature, 74°; minimum, -1°. Precipitation, .13 inch. Snowfall, 1.4 inches.

JUDITH BASIN:

Weather during this period was quite changeable. Maximum temperatures ranged from 20° to 72° within two days. Precipitation was received on three different days. The storm on the 28th began as a rain but later turned into snow and brought 0.25 inch.

Cattle in the winter feeding experiment were weighed at the end of the first 14 days on test. From now on they will be weighed every 28 days.

The precipitation in October was 1.43 inches, or 0.46 over the station monthly average. October with an average mean temperature of 43° was a bit warmer than normal.

Maximum temperature, 72°; minimum, 14°; precipitation, 0.29 inch.

HUNTLEY:

Three days of moderately warm weather at the beginning of the period were favorable for the development of winter wheat on fallowed land where moisture was available. Wheat on other tillage treatments showed little progress. Downy bromegrass is making a good growth on all the continuous winter wheat plots and is doubtless a serious competitor for the limited moisture supply in those plantings.

Soil samples taken within the last few days show the moisture in fallowed ground to extend through the second foot, whereas in cropped land the available moisture is confined to the surface 6 inches of soil, and in plots continuously cropped to winter wheat the ground appears to be dry.

Threshing seed alfalfa was completed, and yields were somewhat higher than anticipated, ranging from 8 to 10 bushels of seed to the acre. Plots sown last spring yielded exceptionally well for new plantings.

Six hundred range lambs have been received at the station for use in the winter feeding experiments.

Maximum temperature 78°; minimum, 18°; precipitation, 0.16 inch.

SHERIDAN:

Except for the first 2 days of the period, and on the 29th, temperatures were considerably lower than during the previous week, but still continued somewhat above the seasonal average. Light rain and snow fell at intervals from the 26th to the 29th, but fair weather prevailed over the remainder of the period.

Grain sorghum varieties were hauled from the field, and growth measurements were taken of the 1931 shelterbelt plantings. A ditch was graded out along the north side of the station to carry run-off water from the steep slope there to the ravine without its running over and washing the plots lower down on the slope.

The average temperature for October was about 3° above the station average. Total precipitation for the month was 0.34 inch, 1.09 inch below the station average. Total precipitation since the first of August is now about average. Moisture falling in August and September has now practically all been evaporated or used by growing vegetation and conditions now are about as dry as in any other year.

Maximum temperature, 79°; minimum, 22°; precipitation, 0.34 inch.

DICKINSON:

Light rain and snow, which melted in a couple of days, resulted in 0.21 inch of precipitation. The total for October amounted to 0.47 inch, only a little over half the normal for the month. Temperatures remained near normal with a low of 7° on the 28th. The mean temperature of 41.4° for the month was slightly below normal.

No fall plowing has been done in the district because of the dry soil.

A block of crested wheatgrass was seeded in barley stubble. A large acreage of crested wheatgrass has been seeded on farms in the district to comply under the 1939 Farm Program.

Cleaning of station seed grain and grasses has continued.

Livestock in the district is in excellent condition, and there is ample feed stored for more than a year's requirement. Some farmers and ranchers have bought additional cattle or sheep to utilize the feed available. Lack of credit and high prices of breeding stock have limited the amount of stock purchased.

Maximum temperature 65°; minimum, 7°; precipitation 0.21 inch.

MANDAN:

Agronomy: Cloudy and cool weather prevailed during the past 10 days. A little snow fell on one or two days.

Late fall seeding of crested wheatgrass has been completed on terraces in field P.

The total precipitation for October was 0.54 inch. The 25-year Station average for October is 0.80 inch. The total for the year to October 31 is 13.64 inches, while the 25-year average is 14.20 inches.

Maximum temperature, 62°; minimum, 6°; precipitation, 0.02 inch.

Horticulture: Mulching of fall planted tulips and lilies was done during the early part of the week. Raking of leaves and general cleaning up of lawns and the various ornamental plantings, has been in progress and is being carried on. Potting of rooted cuttings of bedding plants was done during the week.

Hardy chrysanthemums and perennial asters were blooming up to recently, but the low temperature of 6° finished them off. Older plantings of both these perennials were much later than usual this year. Frequent transplanting or renewal seems essential for the culture of both in this area.

Arboriculture: All pulling, grading, and heeling-in of odd lots of nursery stock has been completed. Seed for planting next spring has been cleaned and stratified. Cedar seed has been planted in beds and mulched. All fall work will be completed today.

BELLE FOURCHE:

The weather was comparatively cool most of the time. The first killing frost occurred October 27, when a minimum temperature of 21° was recorded. The precipitation was not sufficient to be of any value to crops, and the total precipitation for the past month, 0.77 inch, is 0.36 inch less than the average for October.

Strong winds prevailed during the last few days and removed much of the moisture remaining in the surface soil. Fall-plowed land dried very rapidly, and the partial stand of winter wheet obtained on fall plowing is in a precarious condition. Winter wheat on other cultural treatments is more firmly established but is also greatly in need of moisture.

J.W. Wilson, South Dakota Experiment Station, Brookings, visited the station for a couple of days in connection with the lamb feeding experiments.

Maximum temperature, 77°; minimum, 20°; precipitation, 0.07 inch.

NORTH PLATTE:

The month of October was deficient in precipitation by 0.36 inch. Seven months so far this year have been below average in precipitation. Since January 1, 12.28 inches have been recorded, which is 5.18 inches below normal. Measurable precipitation was recorded on only two consecutive days during October. This moisture was enough to start all wheat which has been seeded. The wheat on fallow is stooling and looks good, but that on cropped land has made little growth.

The corn from the plots was weighed and husked. Yields were low, averaging approximately five bushels per acre. Two plots after sorgo failed to set ears. The highest yield of 15 bushels was harvested from the listed plot of the continuous cropping series. The wide spaced rows of corn, 120 and 80 inches, yielded 9.4 and 8.9 bushels, respectively, as compared with 3.9 bushels from the check plots planted in 40-inch rows.

The Early Kalo plots have been threshed and the yields are as follows:

Continuous cropping series.

Spring plowing	17.7 bushels
Fall plowing	14.2 bushels
Fallow	28.8 bushels

Average of two plots after fallow in rotations 155 and 156, 35.8
Average of two plots after wheat in rotations 361 and 362, 12.2

The grain sorghums growing on oats stubble in the sorghum variety plots failed to head, while those seeded on fallow yielded from 30 to 60 bushels.

Maximum temperature, 80°; minimum, 23°; precipitation, none.
Precipitation for October 0.71 inch.

COLBY:

The dry weather continues. A trace of moisture during this period gives this October only a tie with October 1899 as the driest on record. Sunday was very windy and dusty with soil blowing all day, the first since the first week of the month. Otherwise the weather has been fairly pleasant, warm in the daytime with a drop to near or below freezing nearly every night.

The first killing frost of the fall came on the morning of the 28th when the temperature dropped to 21°. We have had light frost which nipped parts of tomato vines and other tender plants but did not kill the plants. Some fields of milo were making good growth until this freeze came. Another hard freeze with the same temperature came on the morning of the 30th. The average date of the first killing frost of the fall is October 7. The frost-free period was 189 days this year. The average is 159.

All the sorghums have been threshed. The wheat has not been seeded. We may have to give up waiting for a rain.

Maximum temperature, 85°; minimum, 21°; precipitation, trace.
Precipitation, January-October, 15.50 inches; 52-year average, 16.27 inches.

HAYS:

It has been generally quiet, cool, and clear with a continuation of the dry weather which has prevailed since August 14. The precipitation from August 15 to October 31 was 0.58 inch, including 0.40 on September 28, and 0.18 on October 8. The total precipitation from July 1 to October 31 is 4.61 inches.

Most of the wheat land has finally been seeded. The stand is very poor on the best fields, and on many fields no germination will occur until after moisture falls. From the roadside there are no green fields to be seen.

The weather has been fine for all kinds of outside work. The plots on the project were seeded during the period October 23-25. The seeding was done with an 8-inch hoe drill which raised a nice mulch of small clods leaving the surface soil in much better condition to resist soil drifting than was expected. There is no danger of soil drifting on the project until the surface condition is changed by moisture and freezing. No attempt was made to place the seed in moist soil. It is hoped that none of it will germinate before rain occurs, after which an even stand may be expected unless in the meantime insects destroy too much of the seed.

The first killing temperature occurred October 28 when the minimum temperature dropped to 24°. A light frost occurred October 10 at a temperature of 32°. This, however, did not kill any of the vegetation. That frost followed an 0.18 inch shower of rain. Since then there has been too little moisture in the atmosphere to cause frost. There was no frost in evidence October 28 when the temperature dropped to 24°. The freeze, however, killed all crops that had remained green to that date.

Maximum temperature, 89°; minimum, 24°; precipitation, none.

GARDEN CITY:

No moisture fell during these ten days. Only a trace fell during the month of October, which was the driest since 1926. The rainfall in September was 0.02 inch, making that month the driest on record. The last measurable moisture that fell, except the 0.02 inch in September, was 0.57 inch on August 18. Dust occurred on four consecutive days out of the ten, and at times it was recorded as 'bad'. Some of the dust was local, and some came in from other areas. During the month of October there were ten dusty days.

Field work consisted of chiseling and listing roadways to help control soil blowing.

Station visitors were Messrs. Jones and Blachly of the Lubbock, Texas, Experiment Station.

Maximum temperature, 85°; minimum, 25°; precipitation, none.

TUCUMCARI:

The first frost occurred the morning of October 30, when a minimum of 29° was registered. All remaining plot and increase land cropped to sorghums was cut and bound before dark that night. With the exeption of some varieties in the late July planting of grain sorghums and a number of forage sorghum variety plots, nearly all sorghums matured before frost.

Harvest and threshing comprised work of the past ten days. The average yield of 32 DLA. milo plots was 18.0 bushels to the acre, ranging from 7.4 to 28.3 bushels. Threshing should be completed within about two weeks.

While not so unfavorable as some of the recent years, 1939 could be classed as a continuation of the drought cycle. Evaporation was high, and precipitation was low.

All months of 1939 to date with the exception of January and May were below normal in precipitation. Total since January 1, 11.20 inches, is 75 percent of normal for this period. The 6-month growing season total of 8.58 inches was 70 percent of normal. The crop year, October-September, precipitation of 12.56 inches was 77 percent of normal.

Corn was virtually a failure. Other station crops, while below normal, produced higher yields than was expected. Ranges are good and cattle are in good flesh. Wheat on the plains is suffering from drought, so will offer little or no winter pasture.

Maximum temperature, 82°; minimum, 29°; precipitation, none.

DALHART:

The first killing frost was a hard freeze the morning of October 30. The temperature reached 22°. On six previous mornings there had been light to heavy frosts, but the temperature had not gone lower than 32°.

Crops had matured all they would before the freeze. We had left 13 rotation plots for harvest after this frost. These were headed and harvested at once. There still remains the kafir increase fields and the sorghum nurseries to harvest.

Rye and wheat plots show a shortage of moisture, and it is doubtful if they can survive the fall and go into the winter. Some of the early seeded wheat in this territory still shows good stands, but except for local areas there is a shortage of moisture in the soil for this wheat.

Maximum temperature, 83°; minimum, 22°; precipitation, none.

The precipitation for the first 10 months of the year totals 13.23 inches; this is approximately 3.25 inches under normal for this period.

BIG SPRING:

On two different occasions during the past ten days it seemed this area was due for a good rain, however, both prospects developed into nothing more than light showers 0.07 and 0.17 inch, respectively. Neither shower was heavy enough to stop field operations.

The rush of a short cotton picking season is about over, and many of the migratory pickers have started to move south again. Less than 10,000 bales have been ginned in this county up to date, and it is estimated that there will not be more than two or three thousand more to come in.

Station work during the past 10 days has consisted mainly of heading milo, picking cotton, and remodeling the feed lots.

Maximum temperature, 90°; minimum, 38°; precipitation 0.24 inch.

LAWTON:

Growing conditions, except the lack of moisture during the last 10 days in October, were fairly good. Precipitation of 0.10 inch on the 25th brought the monthly total to 1.54 inches. The 10-month total at the close of October, 15.94 inches, was deficient 10.91 inches.

During the past ten days the wind velocity ranged from 0.09 to 9.0 miles per hour for the 24-hour periods. A few days were disagreeably windy with considerable dust in the air. A maximum temperature of 92° was recorded on the 22nd. The minimum for the season to date was 32° on the 30th.

Farm operations in adjoining territory are slack. Only a few remanents of cotton remain to be picked and an occasional seeding of wheat is being made in soil too dry to permit emergence. The majority of farmers are hauling water for livestock, domestic use, or both from sources frequently several miles distant.

Small grains on the seedings made immediately after or before the rain on October 8 have made only fair growth, and they cannot go into the winter in a very vigorous condition. The question most frequently asked among farmers is, how much longer can it live without additional moisture?

Although frost was quite general over the State on the 30th, none accompanied the temperature of 32° at Lawton.

The second seeding of wheat in the Wheat-Weather project was made October 27. The seed lies in dry soil and will not germinate until rain is received.

WOODWARD:

The weather has ranged from cool to warm. The maximum temperatures during the period have ranged from 58° to 90°. One or two light frosts have occurred with a minimum temperature of 31°, though temperatures as low as 27° were reported by the Weather Bureau cooperator in Woodward. His thermometers are located much lower than ours. The frosts have done only slight damage to the most tender plants such as tomatoes.

It was fairly windy during the period. No precipitation was received. Since September 1, total precipitation has amounted to 0.94 inch. This fell in seven showers, none of which were effective, varying from a trace to 0.42 inch.

Harvesting of sorghum and cleaning up plots have been completed. Several thousand cuttings have been made and planted in the greenhouse. Considerable clearing has been done in the timber on the west fence line on the new land in preparation for building a fence. The pump house over the pumps at the reservoir is nearing completion. The nursery has been checked in preparation for digging material for fall shipment to cooperators. Considerable grape seed has been cleaned for planting next year.

Planting of wheat plots on the D.L.A. project was started this morning. Judging by the condition of the ground on which this is being planted and results from planting in the cereal project, less than 5 percent of this wheat can be expected to germinate before moisture is received.

Maximum temperature, 91°; Precipitation, none.

PENDLETON:

Extremely dry weather prevails throughout the Columbia River Basin. In most of the area the surface soil is bone dry to the depth of plowing, and the seedbeds are so soft and ashy that shallow seeding is practically impossible. In the driest sections most of the farmers are holding off seeding, hoping for rains to pack the surface soil. Present crop prospects for the area west of Pendleton to the Dalles are the poorest in many years, due to dry surface soil and very little water stored in the subsoil. In the area served by this station moisture conditions are much better, there is ample moisture stored in the subsoil and a fair amount in the surface soil.

Precipitation during September and October totalled only 0.99 inch, this came in widely scattered showers. The 10-year average for September and October on the station is 1.63 inches.

Winter wheat sown on October 1, 12, 14, and 15 has emerged with very good stands on most plots. Wheat sown on October 24 is about ready to break through the ground. In much of the area served by the station, Federation spring wheat is sown in the late fall, the farmers delay seeding this variety until about November 1, in order to avoid

late spring frosts. Seeding of Federation wheat in this area is under way and will continue until probably about December 1, depending upon the weather.

Maximum temperature, 71°; minimum, 15°; precipitation for October, 0.69 inch.

NOTES

During the months November-March Newsletters will be monthly.

***

M. A. Bell has been appointed superintendent of the U. S. Southern Great Plains Field Station, Woodward, Oklahoma, effective November 1, 1939. Since 1936 he has been superintendent of the North Montana Branch of the Montana Experiment Station, near Havre, Montana, which is operated cooperatively with this Division.